



Northwest Bismarck Sub-area Study Executive Summary

prepared for



I. Introduction and Background

Over the past few years, local staff and elected officials have been faced with numerous questions relative to development in and around northwest Bismarck:

- What should be done to address traffic along Ash Coulee Drive, and how will future extension of the corridor and associated development be handled?
- Can River Road handle future growth in the area below the bluffs, and where, when and how can future connections be made from River Road to the top of the escarpment?
- Should Golf Drive or Burnt Boat Drive be extended and if so, should it serve as a local road or a collector street? Would it be better to extend Century Avenue west through the Fire Station?
- Should Tyler Parkway be extended to the north as suggested in past plans?
- Will Tyler Parkway's current configuration be able to handle future traffic?
- Do the corridor alignments proposed by past planning efforts adequately address the needs of the area? Some past plans only took a broad brush look at northwest Bismarck.

In response to these questions, the Bismarck Northwest Sub-Area Study was initiated by the City of Bismarck and the Bismarck-Mandan Metropolitan Planning Organization. Local staff and government officials desire to have a plan in place to effectively manage future development proposals so that important transportation corridors may be preserved. Their goal is to create a comprehensive plan for transportation facilities northwest of Bismarck.

This area has significant potential for future development. Yet, within the Study Area, the natural and built environment offers limited opportunity to extend or expand existing corridors. Therefore, it is critical that future corridors with good connectivity to the existing transportation system be planned.

II. Issues

Issues were identified in the following categories:

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| • Access & Distribution of Traffic | • Environmental impacts |
| • Accommodation of utilities | • Harsh terrain |
| • Barriers to development | • Land use and timing for development |
| • Corridor preservation | • Pedestrian and bicycle mobility |
| • Costs, funding and project programming | • Property and corridor impacts |

III. Proposed Corridor Alignments

Corridor alignment alternatives were derived from the technical analysis with input from the Study Review Committee. Proposed corridor alignments are shown in Figures 1EX, 2EX and 3EX.

Profiles were prepared to examine the approximate grades that could be established for some of the individual corridors. Areas showing a significant amount of cut or fill are indicators of the need for drainage facilities, potential structures, and possibly additional right of way.

The following paragraphs provide an overview of the pros and cons associated with individual alignments. Local technical staffs gave feedback on which alignments they support, and their positions are reflected in the narrative for each corridor that follows.

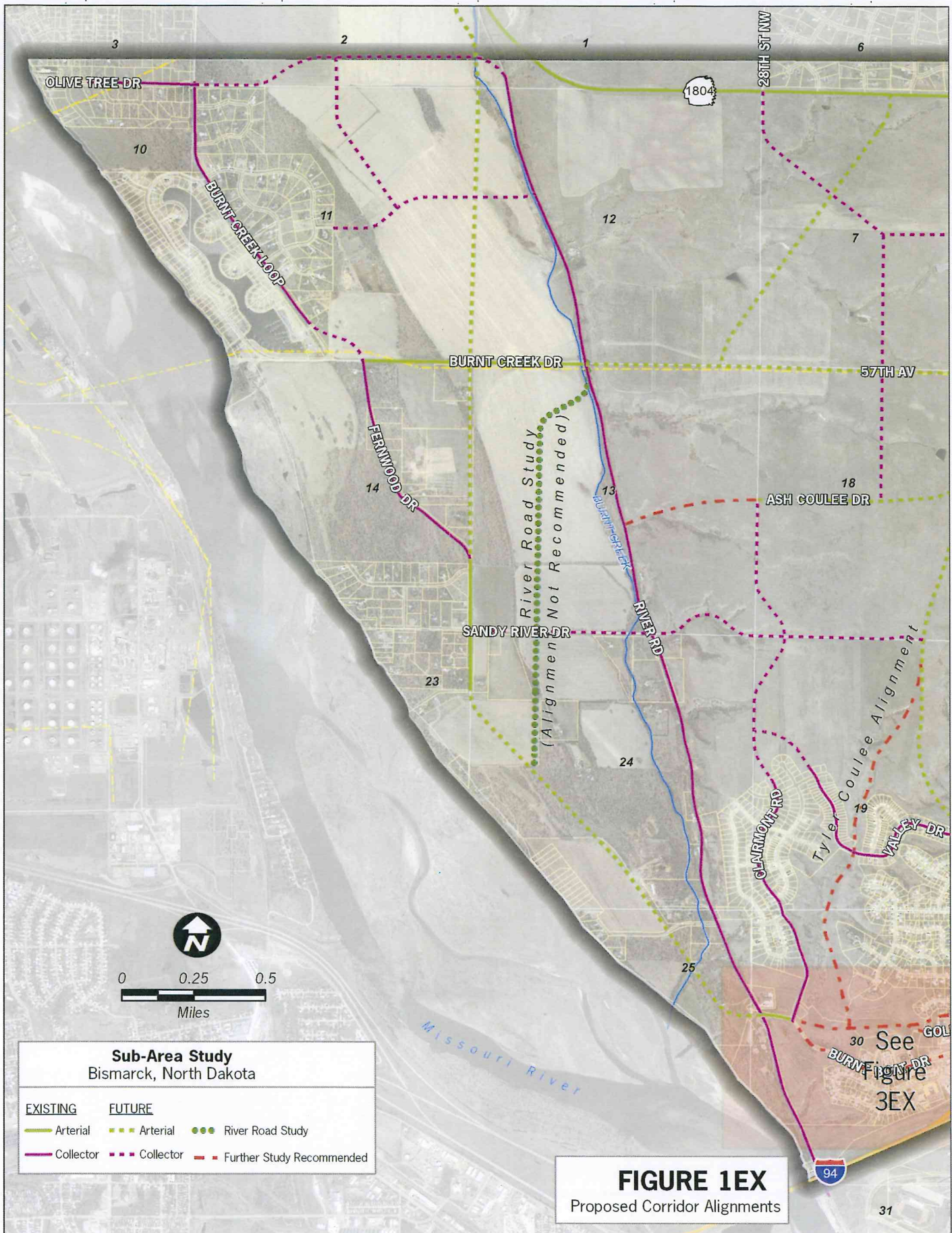
Issues such as corridor speed, type of turn lanes, access management, on-street parking, and use by trucks and other modes of travel are addressed through current city and county policy and ordinances. Further definition of corridor attributes may occur as each corridor develops and with input from public stakeholders.

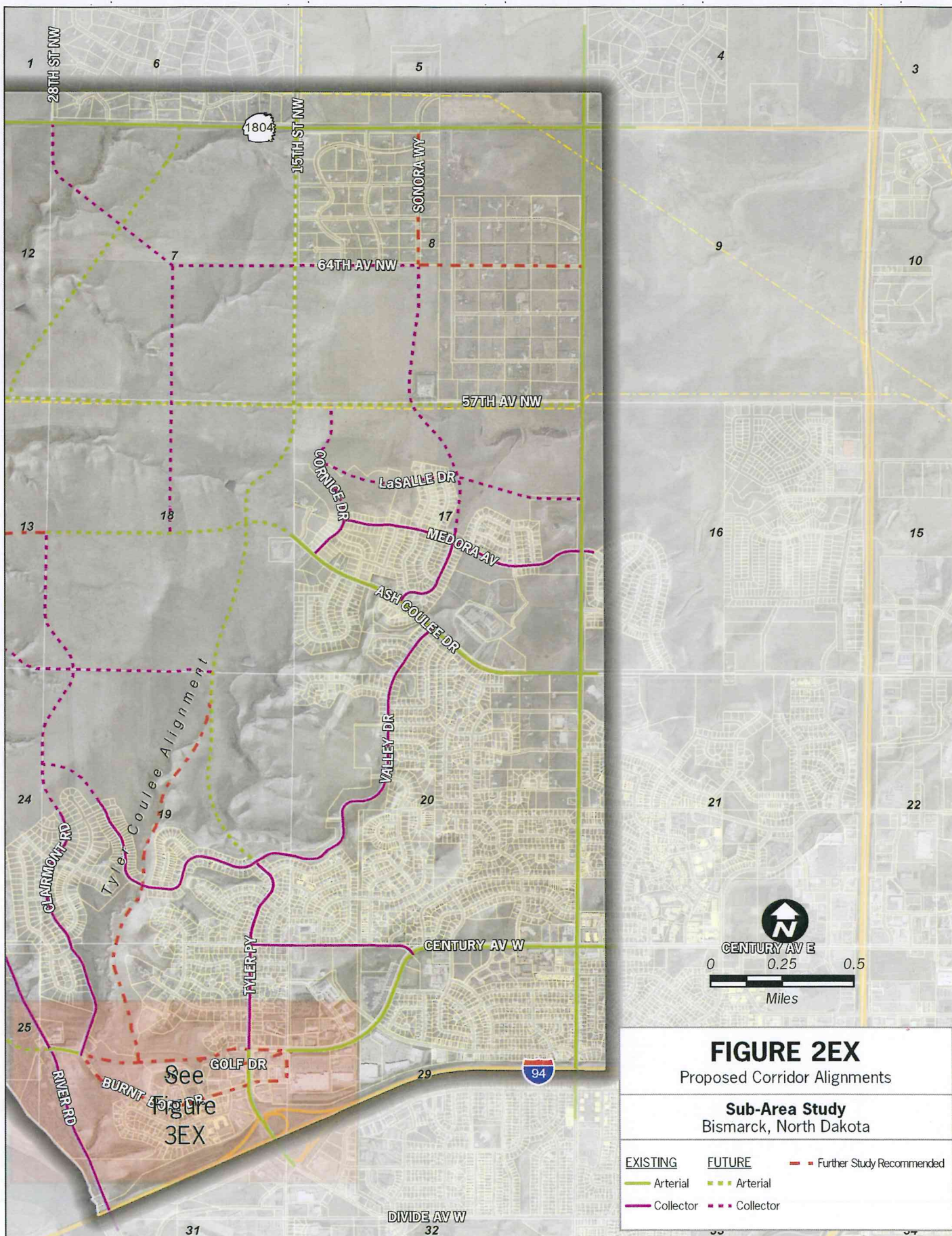
A. Century Avenue, Golf Drive, & Burnt Boat Drive Alignments

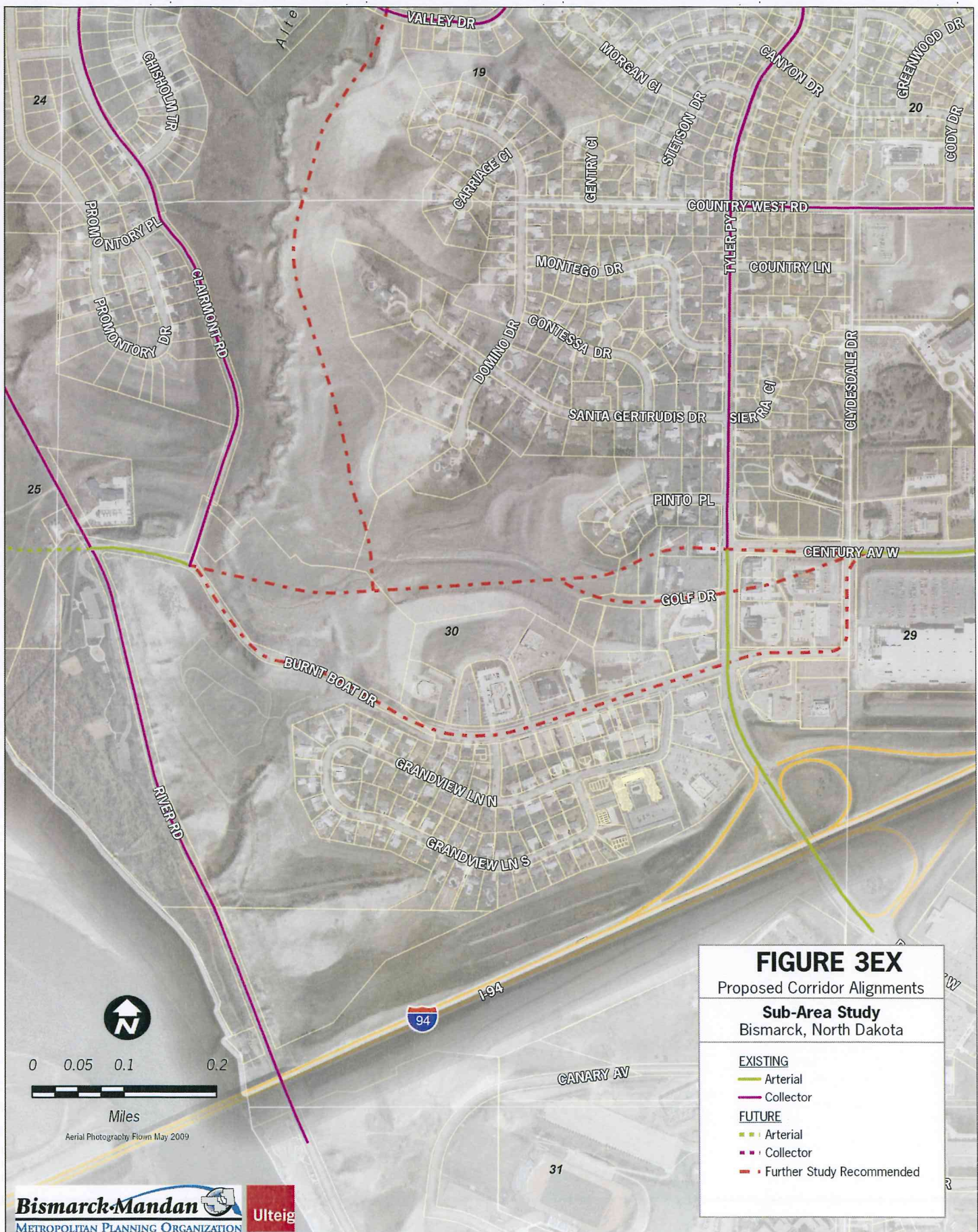
Five options to improve east-west access and mobility by extending or realigning Century Avenue were considered:

- Option A – Do Nothing
- Option B – Extend West off Century Avenue Alignment
- Option C – Extend West off Golf Drive Alignment
- Option D – Extend West off Burnt Boat Drive Alignment
- Option E – Conduct Additional Study of Alignment Alternatives

Option E is recommended because there are unanswered questions concerning alignment alternatives. Concerns were raised regarding potential archaeological site, visual and noise impacts. Efforts to answer these questions were beyond the scope of this study. Often, these questions are answered during the environmental process for a proposed project. The environmental process can address potential social and environmental concerns while examining design alternatives in more detail.







1. Optional Alignment Comparisons and Evaluations

The options for extending Century Avenue were evaluated and compared based on a number of traffic and socio-economic criteria (See Table 1). These criteria and discussion of their evaluations are provided in the following paragraphs. The table compares the options more from a system level than from a level focused only on the Tyler Parkway area. The top two option rankings in Table 1 are highlighted in green and the bottom two option rankings are highlighted in red.

Table 1

Alignment Option	Traffic Evaluation Criteria									Socio-Economic Criteria				
	Intersection LOS	Signal Progression	Vehicle Storage	Tyler Pkway Impacts	Multimodal Opportunities	Interchange Impacts	Traffic Capacity	Traffic Safety	Access Impacts	Visual Impacts	Noise Impacts	Residential Land Purchased	Business & Economic Impacts	Project Cost
Option A – Do Nothing	3	1	4	4	3	2	4	4	4	1	4	1	1	1
Option B – Century Avenue Extension	1	2	1	1	1	1	1	1	1	4	3	2	1	3
Option C – Golf Drive Alignment	1	3	2	2	1	3	2	2	2	3	1	1	3	4
Option D – Burnt Boat Alignment	2	4	3	3	2	4	3	3	3	2	2	1	2	2

1 - Top ranked or best option

4 - Lowest ranked or worst option

a. Traffic Evaluation Criteria

i. Intersection Level of Service

Intersection Level of Service pertains to the amount of vehicular traffic delay at a given intersection. It is influenced by a number of factors, but primarily it is influenced by the number of vehicles at an intersection, the number of lanes and whether the intersection is signalized. Another factor to consider is the number of left turning vehicles, particularly those that don't have a designated left turn lane or those occurring at unsignalized intersections.

Based on our analysis, the Century Avenue and Golf Drive extension alignments performed equally well. The Burnt Boat Drive intersection operates poorly today, and the intersection delay will continue to increase unless substantial improvements are made. The ability to make these improvements is uncertain.

Future traffic levels at Burnt Boat Drive would be higher than other options primarily because the roadway would carry more traffic from existing developments. This would result in lower intersection performance than occurs with Options A or B. The Do Nothing option operated most poorly because of added pressure it placed on a multitude of other intersections within the

study area.

ii. Signal Progression

The ability of traffic to move through a number of signalized intersections along a corridor is influenced by a number of factors. These factors include the number and spacing of signalized intersections, as well as the turning movements by cars moving along the corridor.

Generally speaking, traffic will more easily progress along a corridor that has less traffic and has fewer signalized intersections that are well spaced, as opposed to more signalized intersections that are busier and more closely spaced.

Based on our analysis, the Do Nothing alternative performed the best because poor access to Tyler Parkway would result in little change in traffic conditions along the corridor. An argument could be made that signal progression could be significantly impacted elsewhere, but this has not been studied.

The Century Avenue Extension performed well because it maintains good spacing for the signalized intersections and does the best at spreading heavy volumes of traffic along the Tyler Parkway Corridor. The Golf Drive extension spreads the traffic but not as much. Plus it adds another signalized intersection. The Burnt Boat Drive extension, because of heavier traffic at the intersection and its proximity to the interchange, has the potential to cause greater signal progression problems in the future.

iii. Vehicle Storage

Adequate vehicle storage is needed for traffic using through and turn lanes. When inadequate storage is available, left and right turning traffic can stack into the through traffic lanes, rendering those lanes inoperable. Similarly, through traffic can stack to block access to turn lanes they become inoperable as well.

The need for vehicle storage is dependent upon the amount of traffic and whether the traffic is turning or going straight. Both storage needs and availability factored into our analysis.

There are storage tradeoffs with each of the alignment alternatives. For example, the direct extension of Century Avenue has ample storage room on the east, west and south approaches, but is limited by proximity to the Pinto Place intersection to the north.

The Golf Drive intersection is limited by proximity to the Burnt Boat Drive intersection and both the Fire Station and Pinto Place. The Burnt Boat Drive intersection is limited by proximity to the interchange and driveways on the east and west approaches. Given current vehicle storage issues at Burnt Boat Drive and the importance of the interchange, vehicle storage issues were considered as major issues with this alternative in comparison to other alternatives.

iv. Tyler Parkway Impacts

Our analysis assumed full build-out of traffic lanes along Tyler Parkway, and 30% of full build-out for area development. Under these conditions, each alignment alternative performed relatively the same, with Tyler Parkway operating at near-capacity.

It is important to recognize that should area development exceed the 30% full build out scenario, or should localized high traffic generating development occur, higher traffic volumes would result in more pronounced differences in how well each of the alignment options perform.

Relative impacts to the Tyler Parkway corridor are a function of most of the other traffic analysis criteria examined. The Do Nothing option was considered to perform the worst, assuming that the Tyler Parkway extension is made with no extension of Century Avenue. The heaviest impacts would occur in existing developed areas north of Century Avenue.

With the Burnt Boat Drive alignment option, traffic concerns relate to the high traffic volumes at the Burnt Boat Drive intersection and limitations on vehicle storage between Burnt Boat Drive and the I-94 Interchange.

v. Multimodal Opportunities

Multimodal opportunities relates to the ability to provide or improve non-motorized travel within the study area. In this regard, the Do Nothing option ranked lowest because there would be no provision to extend existing bicycle or pedestrian facilities west of Tyler Parkway. The Century Avenue extension and Golf Drive extension alternatives would provide equal capabilities to extend these facilities, whereas the Burnt Boat corridor has right of way limitations that reduce the ability to adequately provide these amenities.

vi. Interchange Impacts

Analysis of the I-94 Interchange was not included within the scope of this Study. However, placement of major intersections in close proximity to interchange ramps typically creates queues at the interchange that are detrimental to interchange traffic operations. From this standpoint, traffic turning movements that are further from the interchange have fewer impacts. Therefore, the Burnt Boat Drive option raises the greatest concern.

vii. Traffic Capacity

Traffic capacity is influenced by many factors, including vehicle storage, intersection spacing and geometrics. The direct extension of Century Avenue provides the best spacing for major intersections, more room for vehicle storage, and the most corridor capacity for both Tyler Parkway and Century Avenue.

Golf Drive ranks next, since it results in more available lanes than the Burnt Boat Drive option and keeps Century Avenue traffic separate from Burnt Boat Drive traffic. Burnt Boat Drive operates with less capacity since there are fewer lanes and adjacent intersections are in close proximity to Burnt Boat Drive.

viii. Traffic Safety

There are a number of corridor design and intersection geometric features that influence traffic safety. They include curvilinear alignment, steep grades, skewed intersections, excess access, driver confusion, sight distances and regional safety impacts among others.

The options for extending Century Avenue were evaluated and compared based on a number of traffic safety evaluation criteria. These criteria relate to all modes of travel. A summary of how the alignment options compare is provided in Table 2. The top two option rankings in Table 2 are highlighted in green and the bottom two option rankings are highlighted in red.

Table 2

Alignment Option	Safety Evaluation Criteria						
	Curvilinear Alignment	Steep Grades	Skewed Intersections	Excess Access	Driver Confusion	Sight Distances	Regional Safety Impacts
Option A – Do Nothing	1	1	1	1	4	2	4
Option B – Century Avenue Extension	2	2	1	1	1	2	1
Option C – Golf Drive Alignment	3	2	2	2	2	1	2
Option D – Burnt Boat Alignment	4	3	2	3	3	3	3

1 - Top ranked or best option

4 - Lowest ranked or worst option

Overall, the direct extension of Century Avenue is the safest option because it offers a better route when looking at these criteria. The Do Nothing option was the bottom ranked option primarily because of anticipated safety impacts on the overall transportation system. Golf Drive ranked higher than Century Avenue from a sight distance standpoint due to the vertical curve on Tyler Parkway.

ix. Access Impacts

Access impacts have both traffic and socio-economic ramifications. From the traffic side, accesses located too close to major intersections can have a detrimental impact on intersection operations and safety. Furthermore, these accesses can become blocked and experience significant delays when the major intersection traffic gets backed up.

From the socio-economic standpoint, both residential and business property owners appreciate having driveways that are readily accessible. When their driveways (accesses) become blocked, drivers become frustrated and businesses can lose patrons.

The direct extension of Century Avenue has the least impact on access, with access impacts being limited to Golf Drive and Pinto Place. The Golf Drive option would require closure of the east bank driveway and would impact business accesses east of Tyler Parkway through the north-south connection to Century Avenue. Additionally, access to the fire station may become blocked by queues from the Golf Drive intersection.

With the Burnt Boat Drive option, accesses on the east, west and south approaches may become blocked during peak traffic periods. Also, adjacent businesses and Grand View Lane would have detrimental mobility and safety impacts on the Burnt Boat Drive intersection.

b. Socio-Economic Criteria

i. Visual Impacts

Comparisons of visual impacts are subjective and require some assumptions. From the perspective of the Pinto Place neighborhood, negative visual impacts from greatest to least impacting would be the Century Avenue extension alternative, followed by the Golf Drive extension, with the Burnt Boat Drive extension being a distant third. This is the order the options were ranked.

We believe these opinions are subjective because the assumption is made that the valley west of Tyler Parkway remains undeveloped, and the undeveloped look is considered more visually appealing than a developed alternative. If the valley is developed, land use and vegetation adjacent to the streets in the valley could be more influential on the area's visual appeal than choice of alignment options.

ii. Noise Impacts

Noise impacts are proportional to the distance between a roadway and adjacent properties. The closer the roadway, the greater the potential for traffic noise. This study did not conduct noise analysis for the various alignment options.

Therefore, it is not known whether there is a significant difference in noise impacts on Pinto Place residents when comparing the Century Avenue and Golf Drive extension options. Given the distance principle, the Century Avenue option would have a greater noise impact than the Golf Drive option.

It is, however, reasonable to conclude that the Burnt Boat Drive option, while resulting in little if any impact on Pinto Place, would have greater impacts on properties in the vicinity of Burnt Boat Drive. Since most of these properties are more commercial in nature, these impacts were considered lower than the other two alignment options. A noise analysis would need to verify this conclusion.

iii. Residential Land Purchased

Since only the direct extension of Century Avenue resulted in the purchase of residential land (two twin homes), all other options were considered equal.

iv. Business Land Purchased / Impacted

Businesses may be impacted from changes in access, new traffic congestion, or buyouts. The option with the greatest impact on businesses is the Golf Drive option, where a full half block of established businesses would be bought out. This option also impacts the funeral home and the bank located west of Tyler Parkway. Queues from Golf Drive could also impact access to the Fire Station.

The option with the second highest impacts on business is the Burnt Boat Drive option. This option would result in at least two buyouts to address access issues on the east side of Tyler Parkway. Further study is needed to identify exactly which businesses would be impacted. In addition, business impacts associated with the realignment of Century Avenue would occur.

The direct extension of Century Avenue would result in relocation of the Fire Station and impacts to the funeral home. No other business impacts are anticipated.

v. Project Cost

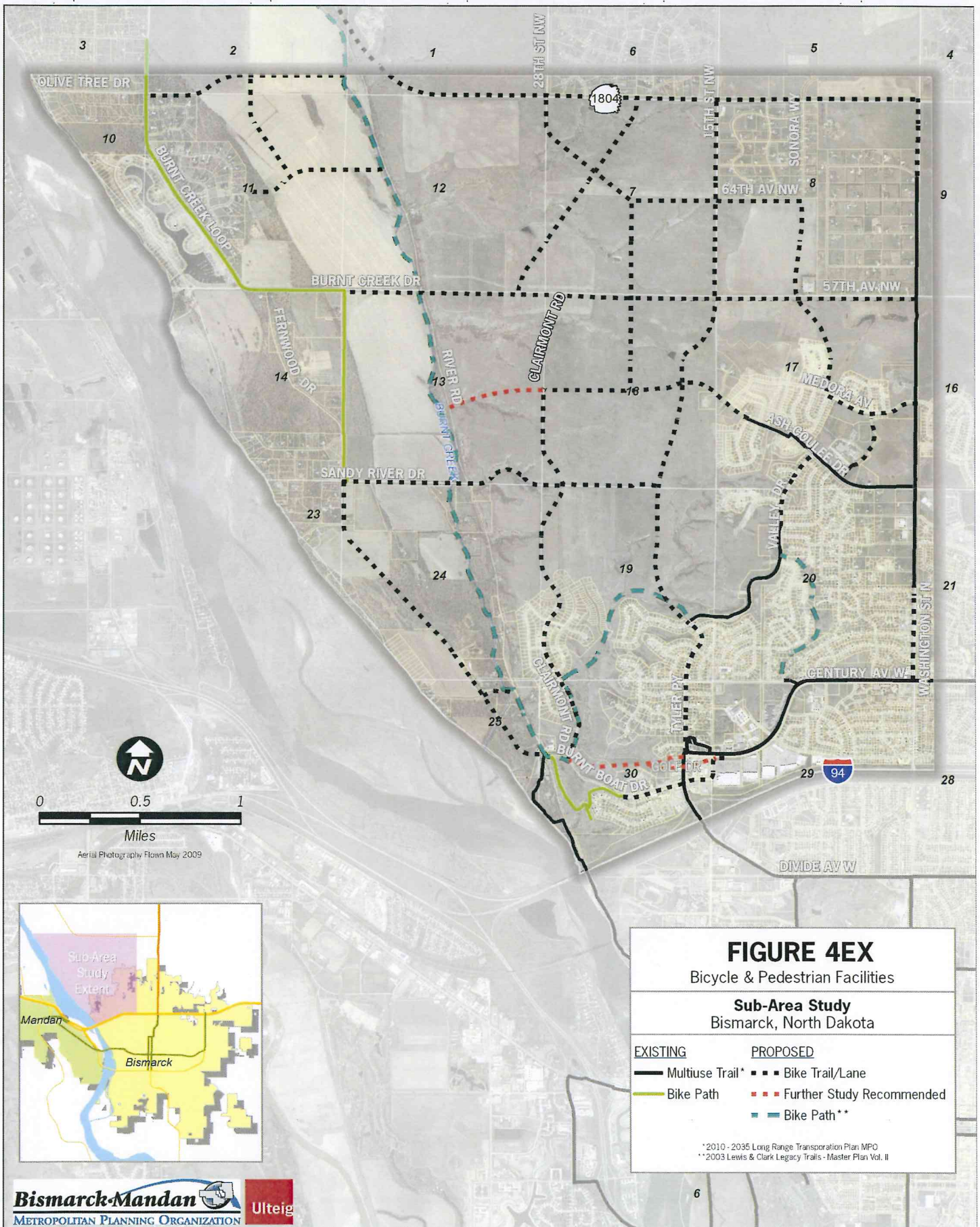
It is difficult to establish detailed cost estimates for these alternatives given the property acquisition required for some. The cost of each alignment option is ranked as follows:

Option A – Do Nothing	Lowest Cost
Option B – Century Avenue Extension	Second Highest Cost
Option C – Golf Drive Extension	Highest Cost
Option D – Burnt Boat Drive Extension	Second Lowest Cost

B. Pedestrian and Bicycle Facility Alignments

Existing and recommended pedestrian and bicycle facility alignments are shown in Figure 4EX. These alignments follow the roadway alignment locations shown and discussed earlier in this chapter. For sidewalks and multi-use trails, it is generally preferable to construct these along roadways because of available right of way. Further, street lighting and the presence of pass-by traffic provides a sense for added safety.

These alignments may be considered candidates for construction of either bike trails or bike lanes. However, bike lanes should be considered where traffic volumes and speeds are lower and more experienced bike riders are anticipated.



IV. Public and Agency Involvement

A. Public Input Meetings

The first public input meeting was held on June 30, 2009 at the Good Shepherd Lutheran Church. Seventy-five property owners and business representatives were in attendance.

The purpose of this meeting was to present and receive feedback on preliminary alignments and corridor issues.

A second public input meeting was held on September 16, 2010 at Horizon Middle School. The purpose of this meeting was to present and receive feedback on the draft Northwest Bismarck Sub-Area Study Report and its recommendations. 119 property and business representatives were in attendance. Significant feedback was received in opposition to the direct extension of Century Avenue and the extension of 64th Avenue NW.

B. Developer and Landowner Meetings

Notices of the public input meetings were sent to area landowners and developers in advance of the meetings. Efforts were made to meet with some stakeholders with interest in large tracts of land in the Study Area. Their ideas and feedback were relayed to the Study Review Committee for further consideration.

C. Study Review Committee

A Study Review Committee (SRC) was formed to guide the study process. The SRC was a technical committee having the task of reviewing study information and analysis, considering alternatives and study recommendations, and providing insight into City, County, State and Federal desires and expectations.

D. Coordination with City and County Officials

Two newsletters were distributed to City and County planning commissioners and elected officials. These newsletters were intended to give them an opportunity to become informed of project objectives and ongoing activities.

Presentations to City and County elected officials were scheduled to occur throughout the study process. The first set was conducted early in the process to introduce them to the study and ask whether there were any initial concerns that the consultant should be aware of. Two additional presentations were provided to the Bismarck City Commission. These were held prior to and following the second public input meeting. The final set of presentations was provided during the adoption phase of the project.

E. NDDOT Management Presentation

An NDDOT Management Presentation was held on August 16, 2010. The purpose of this presentation was to inform NDDOT management on the findings of the draft Report and to receive any feedback they wished to provide. It also informed them of study content so that they could respond to questions from the public involvement process.

F. MPO TAC and Policy Board Meetings

Progress and status reports have been provided on a monthly basis to the MPO Technical Advisory Committee (TAC) and Policy Board. Summaries of these meetings are available upon request from the MPO.

These meetings serve an important purpose in that they enable local officials and technical staff to stay involved with ongoing study activities. It also benefits the study when local technical staffs use their knowledge and expertise to provide guidance to the consultant.

V. Northwest Subarea Recommendations

A. Priority Corridors and Timing of Development

Burleigh County has identified the need to construct an east-west roadway from Washington Street west to River Road. This study identified the 57th Avenue corridor as the optimum location for this alignment. Since this appears to be a high County priority, its construction may occur prior to development.

The availability of roads and utilities, as well as the cost of infrastructure expansion, are factors that impact the cost of development. Therefore, these factors have a great influence on the timing of development. The timing of development is important because it will largely determine which roads get built first and which roads are available to serve the additional traffic.

The following observations were made concerning the timing of development and potential priority corridors:

- 57th Avenue will likely be constructed by Burleigh County within the next five years. This may lead to surrounding development.
- Developers are planning to extend Clairmont Road to the north to service new residential subdivisions. This will place added pressure on the Burnt Boat Drive/Tyler Parkway intersection, possibly heightening the need to extend Century Avenue.
- The public perceives that congestion and safety issues exist at the Ash Coulee Drive and Washington Street intersection. Further analysis should be undertaken to determine whether these issues occur for more than brief periods during the day. Washington Street corridor upgrades that have been programmed should address this intersection.

- Congestion during the morning drop off of the students at Horizon Middle School exists along Ash Coulee Drive. This congestion can be attributed to only one access to the school. An additional access point to Medora Avenue should be developed. There has been a joint effort between the school board and city to improve access to the school.
- Extension of Tyler Parkway or a corridor in the vicinity of Century Avenue would be an expensive endeavor for the City of Bismarck. It may be many years before either or both corridors can be funded. Therefore, choice of which one comes first appears to be an important decision for the City to make.
- A corridor extension in the vicinity of Century Avenue would pay the greatest dividends toward improving access to the Missouri River lowlands, and reducing congestion at Tyler Parkway and Burnt Boat Drive. Tyler Parkway would take the most traffic pressure off the Ash Coulee and Clairmont Road corridors.

B. Recommended City Actions

The City of Bismarck has the ability to use this Report as an important tool in responding to future development proposals in Northwest Bismarck. Yet, this alone does not adequately position the City to preserve future corridors and associated opportunities that exist today. There are a number of steps the City may consider in order to be more proactive in guiding optimum use of the undeveloped land in Northwest Bismarck:

1. Selection of Alternatives

A specific recommendation was not provided to select some alternatives alignments because selection could not be made without further analysis beyond the scope of the Study. Decisions for some corridor alignments will need to be made pending further analysis. These corridors include:

- Extension of Century Avenue (Burnt Boat Drive, Golf Drive and Direct Extension along current Century Avenue alignment remain options)
- Extension of 64th Avenue NW and Sonora Way
- Construction of the Tyler Coulee Corridor
- Extension of Ash Coulee Drive west of the Clairmont Road extension to River Road

2. Complete Environmental Documentation for Century Avenue and Tyler Parkway /Tyler Coulee Corridors

Environmental documentation activities for the Century Avenue and Tyler Parkway / Tyler Coulee corridors should be undertaken to ascertain that these corridors are viable and that the NEPA environmental process is followed.

3. Consider Policies that Promote a Mix of Employment Centers within Planned Residential Land Use

If current plans to develop the Northwest Subarea as primarily residential land become a reality, a high amount of future commuter traffic may result in traffic congestion on much of Bismarck's north side. Ideally, more people would have the opportunity to find work without having to leave northwest Bismarck when traveling to their work place.

Changes in policies and/or modifications in land use plans can be adopted to promote more mixed use development northwest of Bismarck. This could reduce traffic projections, resulting in less future traffic pressure on the entire transportation system.

4. Consider Policies and New Design Standards that Promote Context Sensitive Solutions and Complete Streets

Current City of Bismarck roadway Design Standards and policies do not specifically address context sensitive solutions and complete streets practices. Design elements including right of way needs, lane widths, placement of multimodal facilities and other design elements could be reassessed in relation to future land use and environmental characteristics.

Establishment of new standards and policies requires careful consideration and stakeholder involvement that was beyond the scope of this study. Therefore, it is recommended that the City of Bismarck review current standards and policies to improve the ability for future developments to incorporate context sensitive solutions and complete streets strategies.

5. Acquire Land for Fire Station Relocation (If Applicable)

This study considers an alternative that would extend Century Avenue directly west of Tyler Parkway (with no realignment). In order for this to occur, the City would need to relocate the fire station from the west side of Tyler Parkway.

The Fire Department personnel have indicated that the Fire Department's optimum service area would benefit by relocating to south of the Divide Avenue Interchange. Available vacant locations appear to be few, and unless the City acts in the near future, the cost of acquiring the needed land may increase significantly. Therefore, if the Century Avenue direct extension option is selected, it might be in the City's best interest to acquire property for a relocated fire station sooner rather than later.

6. Acquire Land for Century Avenue Extension (If Applicable)

Corridor right of way is often acquired through the platting process. In the case of the Century Avenue extension, it is unlikely that the land would be dedicated as street right of way through the platting process. It is unlikely because the Century Avenue extension would have limited developable property on either side of the extension.

Therefore, if the Century Avenue extension is to be constructed, the City may need to purchase the right of way for the roadway corridor.

7. Access Management During Platting and Development

This Report discusses the need for corridor preservation, while acknowledging that the understanding of ideal corridor development is changing with the advent of Complete Streets philosophy. Still, the existing north end of the Tyler Parkway corridor serves as a vivid reminder that unless access is managed, the ability for collector and arterial roads to safely and efficiently move future traffic can be left in doubt.

Until a more clear understanding of how additional access can be allowed in a complete streets context without significantly impeding the safety and mobility of vehicular traffic, it is advisable to follow current City ordinances pertaining to access control.

8. Identify Special Transportation Funding Mechanisms

There are limited financial resources available to construct new transportation facilities. Most often, available funding is spent to improve existing infrastructure rather than to build new roads. Therefore, it is common for new roads, roadway extensions, and other new transportation facility improvements to be made when land develops. This allows adjacent landowners to bear some (or all) of the cost for the improvements.

For future corridor improvement projects such as the extension or realignment of Century Avenue or the extension of Tyler Parkway, the City's current funding mechanisms may not work. In order for the City to fund these improvements, there may need to be new funding resources and/or mechanisms identified.

9. Plan for Orderly Extension of Utilities

This study recommends new transportation corridor alignments for northwest Bismarck. These new alignments may influence the desired locations for future utility extensions into northwest Bismarck (See Appendix C). Therefore, it would be prudent to revisit existing master plans and determine whether proposed future utility alignments should be modified to be more consistent with the recommended transportation corridor alignments identified in the northwest Bismarck Subarea Study.

10. Plan and/or Acquire Land for Future Parks and Schools

If northwest Bismarck ever completely fills in with urban residential development, there is potential for as many as 50,000 people to reside there. The 2007 Regional Future Land Use Plan has identified green space within northwest Bismarck that could be used for parks. However, almost all of this land is located in ravines, where grades are not conducive to certain types of park amenities, such as ball fields.

Ideally, there should be a regional park located in northwest Bismarck at some time in the future. This park should have 120 acres or more set aside with adequate flat land available to serve various desirable park functions. This regional park could use some of the flat land that overlooks ravines where additional green space and possible cultural resources are located.

Additionally, future schools will be needed to accommodate the students located within the new developments. Bismarck School District representatives should consider the need for future schools in this area and incorporate site acquisitions in their school development plans.

11. Prepare a Policy for Roundabout Implementation

Arterial and collector street intersections can be ideal locations for placement of a roundabout. Currently, there is no City or County policy to suggest if or where roundabouts should be considered, and what steps should be taken if a roundabout becomes the preferred method for traffic control.

Without a policy in place, it is likely that developers will choose to prepare plats with insufficient right of way and to implement traffic control that has lower initial costs. This could all occur to the detriment of traffic safety and mobility, as well as reduced aesthetics and sustainability for the region. Some municipalities and state governments have adopted policies that require roundabouts to be considered along with other forms of traffic control. Some entities have even gone as far as to require that other forms of traffic control must be proven more effective than roundabouts.

It is recommended that a new City/County policy be adopted that lays out the steps for roundabout consideration, as well as right of way requirements and how future plats will accommodate them.

12. Context Sensitive Corridor Recommendations

This study recommends that future corridor studies and development proposals within the study area incorporate a Complete Streets/Context Sensitive Solutions based approach to more effectively integrate a multi-modal transportation system into the study area. Prime corridors and locations which may especially benefit from this approach include:

- River Road, where strong consideration should be given to maintaining a two lane, limited access scenic route. Implementation of land use policies to preserve this scenic resource by limiting development within eyesight of the roadway in wooded areas is encouraged.
- Clairmont Road and Ash Coulee Drive, where the future development pattern is likely to remain largely residential; and opportunities exist to create a residential avenue that enhances or establishes a strong neighborhood character similar to the Historic Cathedral District.
- All functionally classified intersections of the recommended roadways in the Study Area where there is a strong opportunity to create effective neighborhood service centers that enhance or define the character of their neighborhoods.
- The recommended roadways located between 57th Avenue, Highway 1804, 15th Street NW and 28th Street NW (in Section 12 in Hay Creek Township) where a future commercial and mixed use center is identified in the Regional Future Land Use Plan.

13. Corridor Preservations Recommendations

This study recommends that future corridors be preserved through the platting and development processes. A summary list of the corridor alignment recommendations is provided as follows:

NORTHWEST SUBAREA ALIGNMENT RECOMMENDATION MATRIX				
Corridor Alignment	Key Element	Recommended	Not Recommended	Further Study
Ash Coulee Drive	Optional extension to Clairmont Drive	SRC ✓		
Ash Coulee Drive	Optional extension to River Road		SRC	✓
Burnt Boat Drive	Proximity to Interchange and Business Impacts		SRC	✓
Golf Drive Extension	Business Impacts East of Tyler Parkway		SRC	✓
Century Avenue Extension	Fire Station and Pinto Place Impacts	SRC		✓
Fernwood Drive Extension	Existing Alignment is Central / Parallels River	SRC ✓		
River Road Expansion	Environmental & Physical Constraints		SRC X	
Sandy River Road Extension	Need a Second Connection from Valley	SRC ✓		
57th Avenue North	Section Line / Limited Existing Development	SRC ✓		
64th Avenue North	Connection Need is Uncertain	SRC		✓
Clairmont Road	Planned North-South Traffic Carrier	SRC ✓		
Tyler Coulee	Cost / Environmental / Constructability Concerns		SRC	✓
Tyler Parkway	Direct Connection to Interchange / Limited Options	SRC ✓		

KEY

SRC = Study Review Committee Preferred Alignment

✓ = Study Recommendation

X = Fatal Flaw